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STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
INTERNET: http://www.deq.state.mi.us
RUSSELL J. HARDING, Director

June 6, 1997

Mr. Jon Peterson
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Mr. Peterson:

SUBJECT: Final Design
Albion-Sheridan Township Landfill
Calhoun County, Michigan

The Michigan Department of Environmental Quality (MDEQ) has completed their review of the Final Design submitted for the Albion-Sheridan Township Landfill. Our comments are listed below:

1. Groundwater - Surface Water Interface (GSI) Issues

The information provided by Woodward-Clyde after our May 27, 1997, conference call, was information already contained in the Pre-Design Studies Report. As already stated by MDEQ, it is necessary to either meet the Generic GSI criteria or request a mixing zone determination by MDEQ's Surface Water Quality Division (Operational Memorandum #17). The liable party group can also place wells closer to the river in hopes that natural attenuation and/or dilution would decrease contaminant levels that may be entering the river.

2. Monitoring Well Placement (MW09) Issue

The Final Design Report does not have information to support the assessment that all groundwater flowing south vents to the river. There is a small upward gradient at the MW-16 cluster. What is the upward gradient that Woodward-Clyde has calculated for this well cluster? The cluster is approximately 135 feet from the river and not immediately adjacent to the river. Given the gradient and the distance to the river, it may be unlikely that all groundwater flowing south will vent up to the river. According to the information Woodward-Clyde has provided, the vertical gradient is 0.14 ft/40 ft or o.0035 ft/ft. Although it is very possible that the glacial aquifer and some bedrock aquifer groundwater vents, it is more likely that some groundwater flows to the other side of the river. The low concentration of arsenic in MW-13SG supports the probability the component of groundwater that flows south to the river does not completely vent to the river.

If Woodward-Clyde has evidence to prove or support that the groundwater flow is toward the river on the opposite or south side of the river, please provide it for agency review. If Woodward-Clyde is unwilling or does not have the documentation to support their conclusion, it will be necessary to install MW-09 (#?) in the shallow or weathered bedrock on the south side of the river.

3. The cross-section Woodward-Clyde included in the design documents shows MW-13SG as a very shallow well, but with much geology beneath it. Does Woodward-Clyde have additional geologic or hydrogeologic information south of the river? How is the presence of arsenic in the well explained?

4. MDEQ would like to include clarification in the design report that the use of the "on-site" borrow source is pending, based on testing results. An alternative borrow source should be identified and available for use if the "on-site" borrow source is identified to contain an unusable quality of soil.

If you have any questions or would like to discuss anything included in this letter, please feel free to contact me.

Sincerely,

Kim Sakowski
Superfund Section
Environmental Response Division
517-335-3391

cc: Albion-Sheridan file (L1)
SMU2 file